



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
WinSystems Center Building  
711 Stadium Drive, Suite 252  
Arlington, Texas 76011

21420-2006-F-0055

February 14, 2006

Ronald L. Bruggman  
Department of the Army  
Fort Worth District, Corps of Engineers  
Whitney/Aquilla Lakes  
285 CR 3602  
Clifton, Texas 76634

Dear Mr. Bruggman:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the U.S. Army Corps of Engineers (USACE) proposed development of Ham Creek Park for future recreational use and its effects on the federally listed golden-cheeked warbler (*Dendroica chrysoparia*) (GCWA). The park encompasses approximately 191 acres and is located in Johnson County, Texas on the northern portion of Whitney Lake.

This biological opinion has been prepared in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.) The biological opinion is based on the Biological Assessment included with your letter initiating consultation, information provided by USACE staff, and other sources of information. A complete administrative record of this consultation is on file at the Service's Arlington, Texas, Ecological Services Field Office.

### Consultation History

August 4, 2005: Initial meeting and site visit hosted by members of Whitney Lake USACE staff to discuss proposed development of Ham Creek Park for future recreational use. Whitney Lake USACE personnel provided information on the presence of listed species on the park property. Service representatives identified habitat indicators found on the property and discussed the consultation process, including timelines and biological assessment content, provided a copy of the Consultation Handbook, and provided guidelines on minimization measures.

- August 12, 2005: E-mailed additional information to Whitney Lake USACE staff regarding assembly of a Biological Assessment (BA) and invited them to share any draft copies as they became available.
- September 9, 2005: Received telephone request from Ernest Eberly of the Whitney Lake USACE for additional information regarding the BA. Mr. Eberly was advised that the Service would be responsible for evaluating the estimated effects of the action to listed species and that the USACE should provide an account of all planned actions, project timeframes, and details of park usage after completion.
- November 7, 2005: Arlington Field Office received written request from USACE initiating formal consultation on the proposed action. Written acknowledgement of the initiation package was sent to USACE on November 21, 2005.
- December 21, 2005: Second site visit conducted at Ham Creek Park property. Service personnel and Ronald Bruggman and Sam Masters of Whitney Lake USACE clarified the dimensions of GCWA habitat within and beyond USACE property boundaries potentially impacted by the proposed project. Current account of project plans also disclosed and minimization measures discussed.

## **BIOLOGICAL OPINION**

### **I. Description of Proposed Action**

The USACE in conjunction with Johnson County proposes to develop Ham Creek Park at Whitney Lake for future recreational opportunities. The property proposed for development is approximately 191 acres and is located in Johnson County on the northern portion of Whitney Lake. The park is divided east and west by Ham Creek and its riparian corridor and is further designated into sections A, B, and C, each differing in topography, vegetation, and proposed development.

**General:** Park development would include facilities for day-users and campers. Existing facilities and roadways would be utilized to the maximum extent possible. Park development would be contained within the footprint of existing park facilities as much as possible. Trails may extend outside the described footprint. Figure 1 details the proposed park development.



**Figure 1. Proposed Park Development**

Existing roadway surfaces are 20 feet wide and are mostly gravel overgrown with grass and forbs, with the exception of asphalt roadways located on the west side of the park. The tree canopy overhanging the road surface would be trimmed to a height of 15 feet. All roadway surfaces would remain 20 feet wide. Gravel roadway surfaces would be improved to an asphalt surface and existing asphalt surfaces would have new asphalt surfacing applied. Road shoulders and adjacent drainage ditches would be widened. Existing shoulders and drainage ditches vary up to 5 feet from the edge of the roadway. New road shoulders would be up to 2 feet on both sides of the road. New drainage ditches, with culverts under the roadway as necessary to allow for adequate drainage, would be up to 6 feet wide. Utility lines, including electric, water, sewer and telephone, would be placed within the road shoulders. Road surfaces and corresponding rights-of-way (ROW) would total a width of 36 feet throughout their lengths.

The trails would support hiking, biking and equestrian use. Trail size would average 11 feet wide and would consist of an unimproved surface. Trails situated within woody vegetation would be designed to minimize vegetation removal and no trees would be removed. Tree limbs overhanging the trail at a height less than 16 feet would be trimmed to allow for horse and rider clearance. Specific trail length is not yet determined, but it is estimated approximately 1.5 miles of trail may extend through GCWA habitat within Ham Creek Park. Barriers would be placed at trail entrances to prevent vehicular access, and trails would only be available during daylight hours. Trail entrances would also have signs noting restrictions in order to minimize potential impacts to GCWAs.

Barbed-wire fence and/or pipe fence would be installed along the perimeter of the entire park to prevent ATV access. Vehicle barriers in the form of pipe fence would be placed along roadways and parking areas to restrict vehicle access to road surfaces only. Security lights would be installed at the boat ramp, restrooms, and gatehouse complex for security and safety purposes. Refuse receptacles would be utilized throughout the recreation area.

It is anticipated that initial construction would occur between March and September 2006. Construction would occur in phases over several years as funding is received. Phase I includes renovating existing roadways and constructing a boat ramp with parking lot and courtesy dock. Phase II would involve the renovation of an existing restroom, construction of a new gatehouse entrance complex, new restroom and installing utility lines. Campsites, group shelters, and trails would be constructed in Phase III.

The action area for the proposed project includes the anticipated extent of the direct and indirect effects. The Service has determined the action area to include the proposed 191 acre property and an approximately 51.4 acre area immediately adjacent to the property for reasons that are discussed in the "Effects of the Action" section of this opinion.

#### **Park Sections:**

**Section A** (56 acres) is approximately 4200 feet in length and begins at FM 916, extending to confluence with the Brazos River and varying in width from 153-1,080 feet (Figure 1). The canyon slope along this section is vegetated with mature juniper/oak woodlands. Ashe juniper (*Juniperus ashei*) and plateau live oak (*Quercus fusiformis*) are the dominant tree species in the overstory. Other species occurring less frequently include Texas red oak (*Quercus buckleyi*), white shin oak (*Quercus sinuata* var. *breviloba*), American sycamore (*Platanus occidentalis*), netleaf hackberry (*Celtis reticulata*), cedar elm (*Ulmus crassifolia*), and Texas ash (*Fraxinus texensis*). The canopy cover of the wooded upland areas ranges from 75-90%.

A gate entrance complex would be installed along the access road. The specific location is not yet determined, but would either be placed in Section A or B, with Section A being the preferred alternative (Ronald Bruggman, pers. comm. 2005). The complex would include one-way entrance and exit lanes, gatehouse, parking lot, pull-off lanes, and two gate attendant pads. The complex would be comprised of approximately 4 acres. Section A is a long wooded corridor paralleling the east side of the creek bed, which would serve as the main access road for the park.

**Section B** (58 acres) is comprised of relatively flat, grassy lowlands situated along the flood plain of the Brazos River that would serve as the camping and day use area. The area is generally vegetated with herbaceous species including Johnsongrass (*Sorghum halapense*), silver bluestem (*Bothriochloa laguroides*), giant ragweed (*Ambrosia trifida*), Texas bluebonnet (*Lupinus texensis*) and goldenrod (*Solidago* sp.) Low shrubs, Virginia creeper (*Parthenocissus quinquefolia*), wild grape and green briar vines, along with small clusters of young elm, hackberry, and oak trees, are scattered throughout. A mature juniper-oak complex occupies the fence line along northwestern boundary of this section, while a mix of mature pecan, oak and elm trees line the river bank on the southern edge.

This area would include most of the park facilities. A two-lane boat ramp with a parking lot containing approximately 50 parking spaces to accommodate vehicles with boat trailers would be constructed adjacent to Ham Creek just upstream of the lake. A courtesy dock for boat loading and unloading would also be placed adjacent to the boat ramp. An existing waterborne restroom with showers may be renovated and an additional waterborne restroom would be constructed. It is anticipated that the existing county water system may provide water services. Thirty-five campsites with electricity and water hook-ups would be constructed along the upper portion of the section and twenty picnic sites would be placed near the lakeshore. Additional amenities would include a playground, dump station, group shelters, a hiking/equestrian trail and other various amenities. Trails in Section B may extend beyond the park footprint.

**Section C** (46 acres) is located on the west side of Ham Creek and appears to contain no suitable GCWA habitat (Anjna O'Connor, pers. comm. 2005). Ashe juniper and plateau live oak are the dominant tree species in the overstory, although few mature ashe junipers are present. Other species occurring less frequently include Texas red oak, white shin oak, American sycamore, netleaf hackberry, cedar elm, and Texas ash. The canopy cover of the wooded upland areas ranges from 75-90%. The area is generally vegetated with herbaceous species including Johnsongrass, silver bluestem, giant ragweed, Texas bluebonnet, and goldenrod. Low shrubs, Virginia creeper, wild grape and green briar vines, along with small clusters of young elm, hackberry, and oak trees are scattered throughout the interior.

The trail in Section C would be for hiking-only and would have an unimproved surface 8 feet wide. Like the other hiking and equestrian trails, it would be routed to minimize woody vegetation removal and no trees would be removed. A shelter may be placed adjacent to the road near the middle of Section C. The existing boat ramp within the section would be closed. The road below the hiking trail and group shelter may be closed preventing vehicle access.

**Minimization Measures:** The proposed action also includes several minimization measures in the form of preservation of existing GCWA habitat on the property and efforts to minimize the impacts of human disturbance before and after the park becomes operational. In order to protect and minimize impacts to existing habitat while allowing for the development of the park, perpetual No-Build Zones would be established to preserve GCWA habitat. No-Build Zones would include portions of Sections A and C (Figure 2) after completion of (and outside of) the proposed roadway widening, entrance complex, group shelters, perimeter fencing, and trails. The remaining portion of Section A not included within the No-Build Zone is privately owned, but USACE retains an easement.

Vehicle barriers would also be placed along all roadways and parking areas to prevent vehicular access within GCWA habitat and barbed-wire and/or pipe fence installed along park perimeter to prevent illegal ATV access. Construction would only be permitted outside of the No-Build Zones. Previously disturbed areas would be utilized whenever possible when establishing specific locations for facilities. Whenever possible, facilities would be located as far away as possible from GCWA habitat.



**Figure 2: No-Build Zones, Ham Creek Park, Johnson County, Texas**



It is anticipated the park would operate under Title 36 Rules and Regulations and any additional restrictions placed by the Corps of Engineers and Johnson County. Park gates would be open from 6 am to 10 pm and quiet hours would be in effect from 10 pm to 6 am. All pets would be required to remain restrained at all times. Campfires would be permitted in accordance with local county authority. Gathering firewood would be permitted; however, gathering firewood within GCWA habitat would not be permitted and signs would be installed adjacent to GCWA habitat to that effect.

Construction activities would take place outside of the GCWA nesting season, March through end of July, as much as possible. Due to the fiscal year budgeting process, road construction activities will be necessary during the nesting season. Construction of the remaining facilities adjacent to and within GCWA habitat would occur outside of the GCWA nesting season, with timely funding of project appropriations.

Trees would remain undisturbed to every extent possible. Specific facility locations would be determined by the location of trees and the location for which the least tree disturbance would occur. Tree canopies over roadways would remain intact as much as possible.

Potential impacts of lighting generated by the park development would be minimized through the use of directional lighting. The lighting would be directed away from GCWA habitat as much as possible.

Monitoring of GCWAs would be performed to aid in preservation of habitat within Ham Creek Park. Potential disturbances would be reduced as much as possible following Service recommendations. In addition, as funding allows, wildlife and plant communities would be monitored and appropriate management measures taken as recommended by the Service. This includes the monitoring of oak wilt fungus which if detected, would be controlled to reduce and prevent its spread, depending on availability of funding.

## **II. Status of the Species**

The current list of federally threatened (T), endangered (E), and candidate (C) species that are known to occur, or have been documented in Johnson County consists of the following:

bald eagle (*Haliaeetus leucocephalus*) – T  
black-capped vireo (*Vireo atricapilla*) – E  
golden-cheeked warbler (*Dendroica chrysoparia*) – E  
whooping crane (*Grus americana*) – E

The black-capped vireo and whooping crane are known to occur in Johnson County, but are not expected to occur in the action area due to the lack of habitat. For this reason, USACE has determined that the proposed action would have no effect on the black-capped vireo and whooping crane. Therefore, these species will not be discussed further in this biological opinion, and no take of these species is authorized.

The bald eagle has been reported at various locations at Whitney Lake, but none within or

adjacent to Ham Creek Park have been reported. Habitat within the park and along the shoreline is not considered preferred habitat; however, it is possible that bald eagles could potentially utilize trees along the shoreline for perching. For these reasons, the proposed action is not likely to adversely affect bald eagles. Therefore, this species will not be discussed further in this biological opinion, and no take of this species is authorized.

The federally listed endangered species that does occur in the action area and that may be affected by the proposed action is the GCWA. The Service emergency listed the GCWA on May 4, 1990 (55 FR 18844) and published a final rule on December 27, 1990 (55 FR 53160). The recovery plan for the GCWA was finalized on September 30, 1992. Critical habitat has not been designated for this species.

The GCWA is a small, insectivorous songbird, 4.5 to 5 inches long, with a wingspan of about 7.9 inches. The male has a black back, throat, and cap, and yellow cheeks with a black stripe through the eye. Females are similar, but less colorful. The lower breast and belly of both sexes are white with black streaks on the flanks (USFWS 1992).

The GCWA nests in the juniper-oak woodlands of the Texas Hill Country and winters in the pine-oak woodlands of southern Mexico, Guatemala, Honduras, and Nicaragua. Its entire nesting range is confined to 33 counties in central Texas. Typical nesting habitat is found in tall, dense, mature stands of Ashe juniper mixed with deciduous trees such as Texas red oak, Lacey oak (*Quercus glaucoides*), white shin oak, plateau live oak, post oak (*Quercus stellata*), Texas ash, cedar elm, hackberry (*Celtis occidentalis*), bigtooth maple (*Acer grandidentatum*), American sycamore, Arizona walnut (*Juglans major*), escarpment cherry (*Prunus serotina*), and pecan (*Carya illinoensis*). This type of woodland is often found in relatively moist areas such as steep-sided canyons and slopes. GCWAs are also occasionally found in drier, upland juniper-oak, i.e., live oak, post oak, blackjack oak (*Quercus marilandica*) woodlands over flat topography. Although the composition of woody vegetation may vary from place to place, Ashe juniper, which is necessary for nest construction, is always present.

The males arrive in central Texas in early March and begin to establish breeding territories, which they defend against other males by singing from visible perches within their territories. The females arrive a few days later but are more difficult to detect in the dense woodland habitat. Usually three or four eggs are laid. The average nest height is 16.4 feet above ground. Eggs are generally incubated in April and, unless there is a second nesting attempt, nestlings fledge in May to early June. By early August, GCWAs begin their migration south.

Most studies report GCWA territory sizes ranging from 0.09 to 0.21 pairs per acre (Ladd 1985). Wahl et al. (1990) reported that density estimates ranged from zero to 0.26 pairs per acre with a median of 0.06 pairs per acre among several sites throughout the GCWA's range. Pulich (1976) classified warbler habitat into excellent, average, and marginal corresponding to 0.05, 0.02, and 0.01 pairs per acre.



The primary threats to the GCWA are habitat loss and urban encroachment. Other factors include the loss of deciduous oaks (used for foraging) to oak wilt, nest parasitism by brown-headed cowbirds (*Molothrus ater*), and predation and competition by blue jays (*Cyanocitta cristata*) and other urban-tolerant birds (USFWS 1992).

### III. Environmental Baseline

#### a. Status of the species within the action area.

Ham Creek Park encompasses approximately 191 acres at the confluence of Ham Creek and the Brazos River (Whitney Lake). It is located at the northern portion of the approximately 20,000 acre *in fee* property surrounding Whitney Lake owned by USACE which lies across portions of Bosque, Hill, and Johnson Counties in northern central Texas (DLS Assoc. 1996). This area lies within the Lampasas Cut Plain subregion of Texas. This subregion is typically vegetated with oaks such as Texas red oak, plateau live oak, and white shin oak on the rocky Edwards limestone summits of small divides (Diggs et al. 1999). On large divides, areas of deeper soil typically support the westward extension of the Washita Prairie (Hayward et al. 1992). On the chalky thin soiled slopes derived from the underlying Comanche Peak limestone, white shin oak, sumac species, and Ashe juniper may be seen; these dry rocky areas have a distinctly desert-like microclimate (Hayward et al. 1992) and thus support plants with xerophytic adaptations. Below these slopes, on benches in valleys or on the summits of uplands lacking caprock, extensive areas of prairie can be found on the clay soils derived from the Walnut formation where it is exposed (Diggs et al. 1999). The basal Trinity Group sands (Paluxy, Antlers, Twin Mountains-Travis Peak) underlying the Walnut formation developed typical Cross Timbers vegetation such as post oak and blackjack oak (Hill 1901).

The topographic diversity and deeply cut streams found in various parts of the Lampasas Cut Plain provide important microhabitat variation. In particular, the diverse microhabitats allow the northward extension of many species otherwise found primarily on the Edwards Plateau. Some plants that were traditionally considered Edwards Plateau endemics can be found in the Lampasas Cut Plain. These include big-tooth maple, plateau gerardia (*Agalinis edwardsiana*), wild mercury (*Argythamnia aphoroides*), Wright's milk-vetch (*Astragalus wrightii*), plateau false nightshade (*Chamaesaracha edwardsiana*), scarlet clematis (*Clematis texensis*), Lindheimer's silktassel (*Garrya ovata* var. *lindheimeri*), plateau milkvine (*Matelea edwardsensis*), Lindheimer's muhly (*Muhlenbergia lindheimeri*), devil's-shoestring (*Nolina lindheimeriana*), Heller's marbleseed (*Onosmodium helleri*), Lindheimer's rock daisy (*Perityle lindheimeri*), escarpment cherry, turnip-root scrufpea (*Pedimelum cyphocalyx*), plateau spiderwort (*Tradescantia edwardsiana*), Colorado Venus'-looking-glass (*Triodanis coloradoensis*), Lindheimer's crownbeard (*Verbesina lindheimeri*), and twisted-leaf yucca (*Yucca rupicola*). When considering vegetation, soils, geologic layers, and general aspects of the landscape, some parts of the Lampasas Cut Plain are remarkably similar to the Edwards Plateau (Diggs et al. 1999).

Whitney Lake is located within Bosque, Hill, and Johnson Counties, Texas, all of which are located in GCWA Recovery Unit 2. Our current information indicates that potential suitable

habitat in these counties is estimated at 4,147 acres in Bosque, 566 acres in Hill, and 4,197 acres in Johnson. DLS Associates (1996) determined that approximately 2,800± acres, or 14 per cent, of the estimated 20,000± acres of *in fee*, USACE-owned land in the Whitey Lake Project is suitable habitat for the GCWA. USACE has determined that potential suitable habitat for GCWA within the Ham Creek Park property to be 66 acres (Anjna O'Connor, pers. comm. 2005).

Monitoring and research activities for the GCWA within the vicinity of Whitney Lake have been sparsely documented beginning with the 1878 collection of the second GCWA specimen in the United States by G. H. Ragsdale (USFWS 1992). The most recent and thorough accounts of GCWA status at Whitney Lake have come from the USACE-sponsored 1996 study conducted by DLS Associates and follow-up reports conducted by Espy, Houston & Associates, Inc. (1997, 1998).

DLS Associates (1996) observed a minimum of seven and a maximum of nine male GCWAs holding territories at Whitney Lake within three of the five vegetation areas surveyed which did not include Ham Creek Park. Two of four vegetation areas surveyed during the 1997 breeding season revealed two singing males each (Espy, Houston & Associates, Inc. 1997), also not including Ham Creek Park. The subsequent survey (Espy, Houston & Associates, Inc. 1998) yielded observations of 26 GCWAs including one at Ham Creek Park and 23 within close proximity clustered at the apex of Kimball Bend ranging from approximately 0.5 to 1.8 miles from the park property.

Recent GCWA sightings specific to Johnson County include nine individuals near the intersection of Buck Creek and CR 1234, approximately 8.3 miles from Ham Creek Park (Hicks & Company 1999). Information obtained from USACE indicates that on April 24, 2004, Dr. Guilfoyle and Ranger Sam Masters saw one bird and heard at least two others on the Ham Creek Park property. Service records also indicate the documented presence of GCWAs on privately owned land adjacent to the western portion of Ham Creek Park including three individuals in 2001 and nine individuals in 2005. During this same 2005 survey, an additional male was captured and banded on the Ham Creek Park property.

#### **b. Factors affecting species environment within the action area**

Ham Creek Park was constructed in the late 1950's and remained fully operational until the early 1980's when the east side of the park was closed due to budget limitations. The west side of the park (Section C) contains a one-lane boat ramp which has remained open and is functional when lake levels are adequate for boat launching.

Factors affecting the species environment include vehicular traffic disturbances from FM 916 on the park's northern and western boundaries and a residential development (Fisherman's Paradise) on the northeastern side. Unauthorized use of off-road recreational vehicles is also known to occur within the action area.

#### **IV. Effects of the Action**

The proposed action consists of the development of Ham Creek Park for future recreational use. It is anticipated that direct and indirect effects to the GCWA would result from the action as discussed below. Quantitative measurements of length and area of proposed actions, property perimeters, and on and off-property habitats were calculated using shapefiles provided by USACE and utilizing ArcGIS 9.0.

The direct effects consist of the subsequent construction, operation, and maintenance of a recreational facility for public use. The widening of road ROW to a total width of 36 feet in Section A would remove GCWA habitat averaging approximately 16 feet wide and 5,111 feet in length. An 8 foot wide, 2,799 foot long section of habitat would be eliminated along the northern and eastern portions of the existing roadway in Section B. Maximum total habitat removed by widening the road ROW would be 2.5 acres. Construction of the entrance complex may take place along the roadway in Section A and would directly impact up to 4 acres of GCWA habitat. An additional 2 acres of GCWA habitat could be removed dependant upon the placement of other recreational facilities to be located at unspecified locations in Section B. The regular maintenance of these facilities would also contribute to the disturbance effects discussed further in this section. Construction of the 7,159 foot barbed-wire or pipe perimeter fence and its corresponding 8 foot wide ROW would remove a maximum of 1.3 acres of GCWA habitat in Sections A and B; but, it is anticipated that this ROW would not impact GCWAs if it is constructed outside of the breeding season (Campbell 1995, Horne 2000). However, the regular maintenance of the fence and its ROW could contribute to the disturbance effects discussed further in this section. The construction of these facilities (not including the perimeter fence) is expected to directly remove a total of approximately 8.5 acres of GCWA habitat. The conversion of GCWA habitat into these facilities makes it no longer suitable for GCWAs, thus harming the birds that may utilize the habitat during the breeding season.

The effects of human disturbance related to the construction, operation, and maintenance of the recreational facilities include, but are not limited to, elevated noise levels, presence of humans and machinery, lighting, and increased predation. The adverse effects of human activities on avian communities have been well documented (e.g., Blair 1996, Friesen, et al. 1995, Gutzwiller et al. 1998, Riffell et al. 1996, Wilcove 1988). Additional widening of the road ROW to 36 feet in width could negatively affect GCWAs, since clearing of corridors as narrow as 33 feet have been known to negatively affect GCWA breeding habitat through fragmentation (Horne 2000). Coldren (1998) determined territory selection from habitat edges by GCWAs as related to reproductive success and suggested 492 feet as the point at which GCWA territories are affected by edge habitat.

The proposed hiking/equestrian trails may also negatively affect GCWAs. Miller et al. (1998) demonstrated that composition and abundance of birds can be altered adjacent to recreational trails in forest ecosystems. In particular, some species do not occur, or occur in lower densities, near recreational trails than at greater distances, whereas some species, mainly generalists, were more abundant near trails. Species sensitive to disturbance by humans may avoid areas where human activity is common, or may occur in reduced abundance. GCWAs are especially

sensitive to these effects and are not usually found in close proximity to human developments (e.g., Benson 1990, Engels and Sexton, 1994, Sexton 1987).

Dependant upon the unspecified placement of the hiking/equestrian trails, all GCWA habitat on the property could potentially be subject to the disturbance effects resulting from the construction of these trails, road ROW, and other facilities located within or adjacent to defined GCWA habitat. The design of the park restoration would incorporate No-Build Zones to preserve the remaining GCWA habitat on the property. However, the remaining 57.5 acres of total “on-property” GCWA habitat in Sections A and C (which contains no habitat) less all habitat directly removed, would likely be rendered unsuitable for use by the birds and constitute harassment.

Effects related to harassment are expected to extend outside the boundaries of Ham Creek Park to the point at which they deter GCWAs from utilizing adjacent habitat or affect the reproductive success of birds using the adjacent habitat. Because the property is bound by roadways on the north and west, and the Brazos River to the south, the disturbance effects would only be expected to extend to the adjacent private property east of Section A and north of Section B, and to the USACE-owned property east of Section B.

Indirect effects are those project related effects which are reasonably certain to occur, but later in time. Increases in predator presence could result from increasing the width of the road ROW. Rich et al. (1994) found that corridors as narrow as 26.3 feet may attract cowbirds and nest predators to corridors and adjacent forest interiors. Maintenance and use of these ROWs may also attract cowbirds which forage in mowed areas within ROWs and to powerline poles on which males display (Rich et al. 1994). Although GCWAs prefer nesting in the interior forest (Coldren 1998), they are often observed at forest edges (Sexton 1991). Avian predators (e.g., American crow [*Corvus brachyrhynchos*], blue jay, grackle [*Quiscalus sp.*]) are more abundant in GCWA habitat within 328 feet from edges (Arnold et al. 1996) which may affect GCWA use and/or reproductive success (Coldren 1998, Fink 1996). Further indirect effects in the form of increased predator presence could result from the installation of the hiking/equestrian trails. Miller et al. (1998) indicated that habitat edge species, such as blue jays, which have been shown to be incompatible with GCWA's (Engels 1995, Engels and Sexton 1994), were more abundant on sites with recreational trails than on sites without trails. Additional indirect effects include the potential import and spread of noxious vegetation within the action area. Noxious plants have the ability to displace native vegetation, thereby reducing habitat quality.

The extent of the direct and indirect effects of the action may occur outside the boundaries of Ham Creek Park. Currently, there are no specific guidelines on the distance from commercial/urban land use that would not be expected to affect GCWAs; however, it is believed that large habitat patch size and/or connectivity to larger blocks of habitat reduce the effects (Arnold et al. 1996, Coldren 1998, Sexton 1991). GCWA habitat located east of Section A and north of Section B does not benefit from connectivity to larger blocks of habitat due to encroachment from Fisherman's Paradise residential development. This habitat, located off the park, is also noncontiguous and is made up of five peninsular parcels east of Section A and one narrow linear strip north of section B totaling 32.2 acres ranging in area from 0.4 acres to 11.5 acres. GCWA habitat east of Section B is contiguous and is currently not bound by development



or natural features and is known to support GCWA territories (Espy, Houston & Associates, Inc. 1998).

Based on Coldren's (1998) work, it is anticipated that the effects regarding the construction, operation, and maintenance of the park and the use of the unspecified hiking/equestrian trails could extend from the boundary of the property to a maximum distance of 492 feet onto adjacent off-property habitat totaling 28.9 acres of affected habitat east of Section A and north of Section B (Figure 3). Unaffected habitat remaining beyond this 492 foot point would consist of two small, disconnected fragments totaling 3.3 acres unsuitable to support a GCWA territory and therefore would be included in the action area. East of Section B effects of the action would be expected to impact habitat 492 feet beyond the park boundary totaling an additional 19.2 acres to be included in the action area.

It is expected that harassment of GCWAs related to the effects of the development of the property would potentially reduce suitability of the adjacent off-property habitat a total of approximately 51.4 acres outside the park property. Therefore, the action area includes the approximately 191 acre Ham Creek Park property and up to 51.4 acres immediately adjacent to the eastern side of the property.

#### **IV. Cumulative Effects**

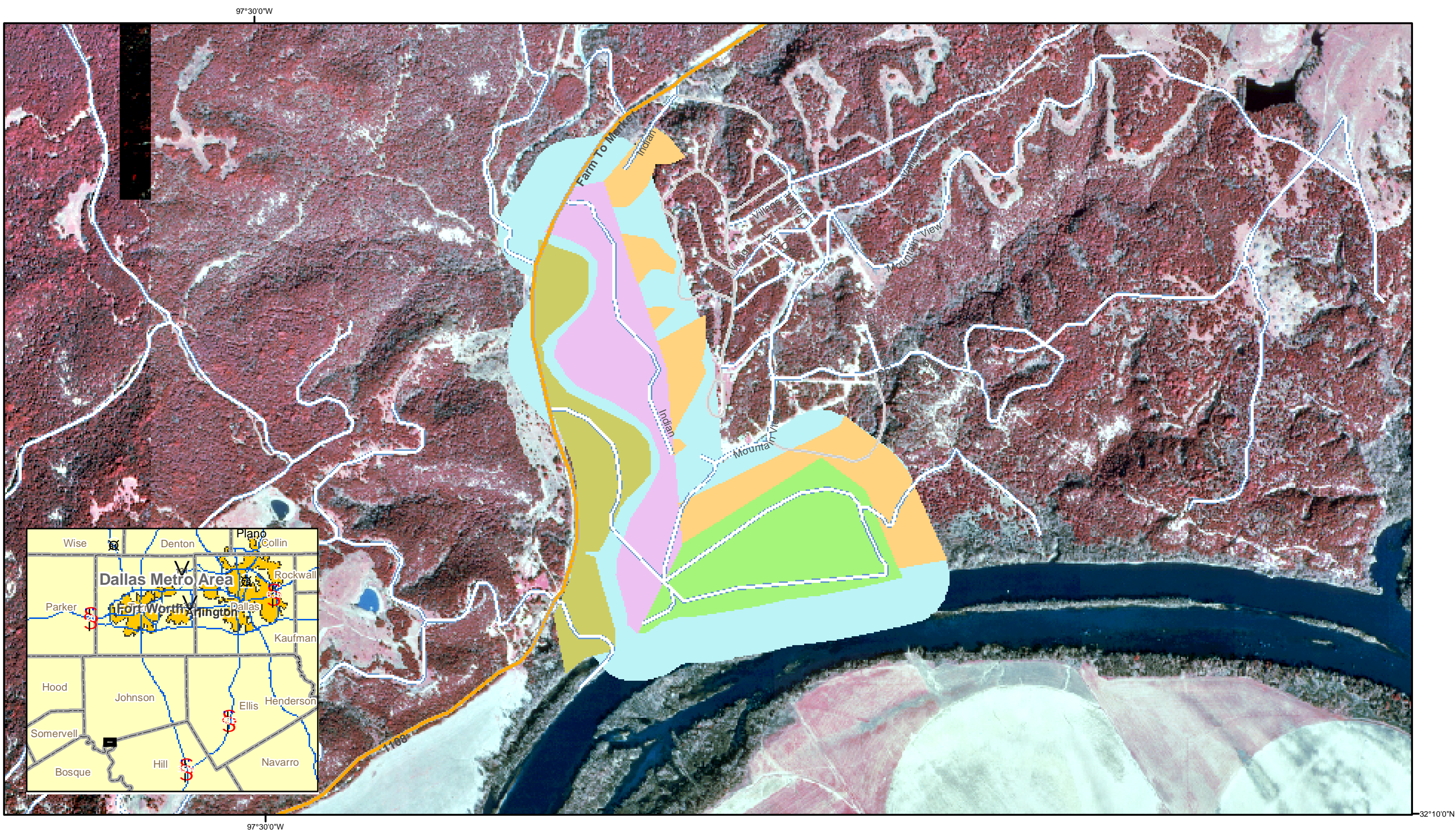
Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

At this time, no future state, tribal, local or private actions are known to be planned within the action area. Site visits, as well as discussions with USACE staff, indicate that most all developable space between USACE property and Fisherman's Paradise has presently been converted to residential properties. Future actions occurring within the action area on adjacent USACE property, including planned expansion of the hiking/equestrian trails east of Section B, would require a separate consultation.

#### **V. Conclusion**

Possible harm and/or harassment to GCWAs would only occur on a small portion of the total nesting habitat in Texas. Habitat within the action area is not representative of that which would be considered most critical to GCWA recovery because it is bound by fragmenting obstacles on three sides, comprised of varied vegetative quality, and has been the source of only three confirmed sightings in recent years. Larger contiguous blocks of habitat occur within the vicinity of the action area providing possible relocation opportunities for potentially displaced GCWAs. After reviewing the current status of the GCWA, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the development of Ham Creek Park for future recreational use, as

Figure 3: GCWA off-property affected habitat, Ham Creek Park, Johnson County, Texas.



**U.S. Fish & Wildlife Service**  
**Arlington, Texas, Ecological Services Field Office**  
Projection: UTM Zone 14N, NAD 1983, GRS 1980  
Production Date: 12/29/2005

- Off-property GCWA Habitat
- Section A
- Section B
- Section C
- Sections A & B 150m Buffer



proposed, is not likely to jeopardize the continued existence of the GCWA. No critical habitat has been designated for these species, therefore, none will be affected.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by USACE so that they become binding conditions for any action, grant, or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. USACE has a continuing duty to regulate the activity covered by this incidental take statement. If USACE (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, USACE must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement (50 CFR §402.14[i][3]).

### **Amount or Extent of Take Anticipated**

The Service anticipates that the proposed action could result in the incidental take of GCWAs. Take would be in the form of harm and harassment. Harm to the GCWA would occur from the direct conversion of approximately 8.5 acres of GCWA habitat on the property proposed for development. Take in the form of harassment would occur on approximately 109 acres of GCWA habitat resulting from the maintenance and future use of project facilities.

Take, in the form of harm and/or harassment, is difficult to quantify and usually cannot be estimated in terms of numbers of individuals. Population densities of GCWAs have been shown to be proportional to habitat quality (Pulich 1976). Habitat quality of Ham Creek Park is perceived to be of varied quality due to vegetation composition; encroachment from residential development to the east and the effects of fragmentation brought about by the residential development; the Brazos River to the south; and FM 916 to the north and west. Estimates of average GCWA territory size within suitable habitat found on USACE property at Whitney Lake are not currently available.

Population estimates for GCWAs are quantified in terms of total estimated area of potential suitable habitat divided by the estimated average area of breeding territories. Because of the difficulty in determining territory size due to varied habitat quality, and because harm to GCWAs will be from actions taken which reduce habitat area, the maximum amount of incidental take allowed under this BO is prescribed in terms of area.

Based upon estimates by USACE detailed in the Biological Assessment, two site visits conducted by USFWS, and a review of publicly available information and scientific literature, it is anticipated that 117.5 acres of suitable habitat for GCWAs could be taken.

### **Effect of the take**

In the accompanying biological opinion, the Service determined that the level of anticipated habitat take is not likely to result in jeopardy to the GCWA.

### **Reasonable and Prudent Measures**

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of the GCWA:

- 1) Clearing of GCWA habitat to construct the barbed-wire and/or pipe perimeter fence will be scheduled outside (September through February) of GCWA breeding and nesting season. The resulting ROW will be no wider than 8 feet and will also be maintained outside of the breeding and nesting season. All vegetation clearing will be consistent with the current practices recommended by the Texas Forest Service to prevent the spread of oak wilt.
- 2) The No-Build Zones will be clearly marked prior to construction, vegetation removal, or other earth-disturbing activities to prevent accidental clearing by work crews. The No-Build Zones will be managed as GCWA habitat as appropriate. Buffer areas between the proposed facilities and the No-Build Zones will be planted and/or maintained as native vegetation to create a transitional area between these facilities and remaining habitat.
- 3) Hiking/equestrian trails developed within No-Build Zones will be designed as 'nature trails' with no hard surfaces, minimal vegetation removal, and will be constructed and maintained outside (September through February) of GCWA breeding and nesting season.
- 4) Impacts related to lighting generated by the facilities will be minimized by the use of directional lighting and buffers around GCWA habitat. Available lighting designs and methods will be investigated and used as appropriate to reduce impacts to birds.

### **Terms and conditions**

In order to be exempt from the prohibitions of section 9 of the Act, USACE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.



- 1) USACE will develop and implement an appropriate monitoring plan for reporting progress in development of the property and implementation of the reasonable and prudent measures. Breeding season surveys will be conducted until construction of all facilities is completed and results reported to the Service. The content, schedule, and format of the monitoring plan will be at the discretion of the USACE.
- 2) USACE must provide sufficient guidance to its employees and contracted employees to ensure compliance with the reasonable and prudent measures of this biological opinion before the proposed actions may be covered by the incidental take allowed by this opinion.

The Service anticipates that no more than 117.5 acres of GCWA habitat would be taken as a result of the proposed action (max. of 8.5 acres directly removed and max. of 109 acres reduced in habitat suitability). Reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, reinitiation of consultation will be required. USACE must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

The Service will not refer the incidental take of any migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

### **Conservation Recommendations**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The following recommendation is provided for consideration by USACE.

Whitney Lake currently operates under a Master Plan revised in June 1972 prior to the listing of the GCWA and the black-capped vireo. USACE is encouraged to partner with the Service in the development and implementation of supplements to this Master Plan regarding resident threatened and endangered species as originally suggested by this office in a letter dated October 16, 2001.

The most recent partial survey of USACE property at Whitney Lake for federally-listed species was conducted in 1998 and was the last in a series of three limited surveys initiated in 1996. Updated surveys to quantify listed species habitat and subsequent designations of environmentally sensitive areas (ESAs) could prove useful to USACE and the Service with respect to future development pressure at Whitney Lake by preventing the need for (or streamlining the process of) future consultations. Such information would also be very beneficial to USACE in fulfilling its section 7(a)(1) duties.

In light of the increased and anticipated urban growth around Whitney Lake, we suggest that a proactive approach to conservation through supplementing or revising the current Master Plan could save time and money by identifying areas with specific management needs, expediting future section 7 consultations, and allowing for continued management of USACE property for its intended purposes. In addition to these benefits, further knowledge of the little-known GCWA populations at Whitney Lake and vicinity could prove invaluable to the recovery of the species. Whitney Lake lies entirely within Recovery Unit 2 for the GCWA, which currently has a known population of less than 50 birds. Criterion 1 of the GCWA Recovery Plan requires the protection of enough habitat to support a viable population within each of the eight Recovery Units. Current information indicates that a viable population could range from 1,000 to 3,000 pairs of GCWAs. The large amount of habitat identified on USACE property could further the recovery goal in this unit. The Service would be happy to assist in future habitat surveys and the designation of ESAs as our resources allow.

### **Reinitiation Notice**

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service appreciates the cooperation extended by USACE staff and participating parties during this consultation. If further assistance or information is required, please contact Mr. Sean Edwards or myself at the above address or telephone (817) 277-1100.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Cloud".

Thomas J. Cloud, Jr.  
Field Supervisor

cc: Regional Director, FWS, Albuquerque, NM

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## **PERSONAL COMMUNICATIONS**

Bruggman, Ronald. 2005. Whitney Lake USACE, Clifton, Texas.

O'Connor, Anjna. 2005. Whitney Lake USACE, Clifton, Texas.